

## Abstract

5 The invention relates to the projection of magnetic gradient fields for use in Magnetic Resonance Imaging. The projection of a gradient outside of a field generating assembly allows imaging of samples which will not physically fit inside the coil confines.

10 An apparatus and method for improving the linearity of the projected gradient field is disclosed. This is achieved by arranging the position of the magnetic field generating coil conductors such that the second derivative of a gradient component is equal to zero. In one practical example the linearity is improved by providing a first circular coil which is positioned so that its centre is offset along the axis of the field generating coil assembly by a distance equal to half the radius of the coil. In another example a pair of  
15 current carrying wires are selectively positioned offset from a region of interest.